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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/669,748	09/25/2003	Cheol-Hee Moon	P56909	4498

7590

01/11/2006

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EXAMINER

COLON, GERMAN

ART UNIT	PAPER NUMBER
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2879

DATE MAILED: 01/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

18

Office Action Summary	Application No. 10/669,748	Applicant(s) MOON, CHEOL-HEE	
	Examiner German Colón	Art Unit 2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-5 and 7-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,5,7-12,14 and 17-24 is/are rejected.
- 7) ☒ Claim(s) 3,4,13,15,16 and 23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>8/8/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The Amendment, filed on October 12, 2005, has been entered and acknowledged by the Examiner.
2. Cancellation of claims 2 and 6 has been entered.
3. Addition of claims 21-24 has been entered.

Claim Objections

4. Claim 23 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 23, which depends from claim 12, recites the limitation of the address electrodes being orthogonal to the display electrodes. However, lines 14-15 of claim 12 already claimed said limitation.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an

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international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 5, 8, 9, 11 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Asano et al. (US 6,008,582).

Regarding claim 1, Asano discloses a PDP, comprising (see Figs. 4 and 5 in view of Fig. 1):

a front substrate **10** and a rear substrate **3** opposing one another with a predetermined gap therebetween;

a plurality of display electrodes **4,5** formed on the front substrate;

a dielectric layer **6** formed on the front substrate covering the display electrodes;

a plurality of first barrier ribs **1a,1b,1c** and a plurality of second barrier ribs **52a,52b,52c** formed on the rear substrate essentially perpendicular to each other forming an array of discharge cells **2a**, each discharge cell being completely surrounded by said first and second barrier ribs;

a plurality of phosphor layers **9** formed in the discharge cells; and

a plurality of electrically conductive address electrodes **8** being formed orthogonal to the display electrodes in the discharge cells, said address electrodes being parallel to said first barrier ribs, the address electrodes being coated with a dielectric material (see Col. 4, lines 43-44), wherein a phosphor layer is further coated on an outer circumference of the dielectric material coating the address electrode (see Fig. 1 in view of Col. 4, lines 43-44).

Regarding claim 5, Asano discloses a height t_2 of the second barrier rib being less than a height t_1 of the first barrier ribs (see Figs. 4-5).

Regarding claim 8, Asano discloses conductive wires forming the address electrodes being polygonal in cross section (see Fig. 1).

Referring to claim 9, Asano discloses the discharge cells **2a** defined by the first and second barrier ribs having a polygonal shape (see Figs. 4-5).

Referring to claim 11, Asano discloses the discharge cells defined by the first and second barrier ribs being rectangular and staggered to discharge cells on an opposite side of a first barrier rib (see Figs. 4-5 in view of Fig. 1).

Referring to claim 20, Asano discloses the address electrodes being realized through electrically conductive wires.

7. Claims 1, 12, 14, 17, 19 and 22-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Kato et al. (US 6,670,757).

In regards to claims 1 and 12, Kato discloses a PDP comprising (see at least Figs. 7, 9, 25 and 26):

- a front substrate **10** and a rear substrate **20** opposing one another with a predetermined gap therebetween;

- a plurality of display electrodes **41,42** formed on the front substrate;

- a dielectric layer **11** formed on the front substrate covering the display electrodes;

- a plurality of barrier ribs formed on the rear substrate comprising a plurality of first barrier rib members **21** formed in a direction orthogonal to the display electrodes, and a plurality of second barrier rib members **23** formed in a direction parallel to the display electrodes, the first barrier rib member intersecting the second barrier rib members (see at least Fig. 7, in view of Col. 11, lines 28-35), the plurality of barrier ribs forming an array of discharge cells, each

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discharge cell being bounded by a pair of first barrier rib members and a pair of second barrier rib members;

a phosphor layer **22** being formed in respective discharge cells; and

address electrodes **31** comprising conductive wires and coated with a dielectric material **24**, the address electrodes being mounted on the second barrier rib members (see Col. 11, lines 28-35), the address electrodes being orthogonal to the display electrodes.

In regards to claim 14, Kato discloses a height t_2 of the second barrier rib member being less than a height t_1 of the first barrier rib member (see at least Fig. 7 in view of Col. 11, lines 28-35).

In regards to claim 17, Kato discloses a phosphor layer **22** being coated on an outer circumference of the dielectric material coating the address electrode (see Fig. 7).

In regards to claim 19, Kato discloses the conductive wires forming the address electrodes having a polygonal cross section (see at least Fig. 25).

Regarding claims 22 to 24, the claims are rejected over the reasons stated in the rejection of claim 12.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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9. Claims 7 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asano et al. (US 6,008,582).

Regarding claims 7 and 10, Asano discloses the claimed invention except for the limitation of the address electrodes having a circular cross section and the discharge cells having a circular shape.

However, it has been held that a change in shape is generally recognized as being within the level of ordinary skill in the art. Thus, it would have been obvious to one having ordinary skill in the art to provide the address electrodes with a circular cross section and the discharge cells with a circular shape, since such a modification would have involve a mere change in the shape of a component. See for example Kao (US 6,495,967) and Kunii (US 6,608,441) for evidence of discharge cells having a substantially circular shape; and Moore (US 6,459,200) for evidence of wire electrodes having a substantial circular cross section.

10. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al. (US 6,670,757).

Regarding claim 18, Kato discloses the claimed invention except for the limitation of the address electrodes having a circular cross section.

However, it has been held that a change in shape is generally recognized as being within the level of ordinary skill in the art. Thus, it would have been obvious to one having ordinary skill in the art to provide the address electrodes with a circular cross section, since such a modification would have involve a mere change in the shape of a component. See for example Moore (US 6,459,200) for evidence of wire electrodes having a substantial circular cross section.

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11. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Asano et al. (US 6,008,582) or Kato et al. (US 6,670,757) in view of Mun (KR 102000-0039002).

Asano and/or Kato disclose the claimed invention except for the limitation of the address electrodes being completely surrounded by the dielectric material and the dielectric material being completely surrounded by the phosphor layer. However, in the same field of endeavor Mun discloses a PDP having an address electrodes completely surrounded by a dielectric material and phosphor layer, with the purpose of enlarging the phosphor area, thus increasing the luminance of radiation (see Page 9-3, paragraphs 18-24). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to completely surround the address electrode with a dielectric material and phosphor in order to enlarge the phosphor area, thus increasing the luminance of radiation.

Allowable Subject Matter

12. Claims 3, 4, 13, 15 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The claims would be allowable for the reasons given in the Office Action mailed 7/13/2005.

Response to Arguments

13. Applicant's arguments filed October 12, 2005 have been fully considered but they are not persuasive.

i. Applicant argues that the cited references fail to teach a phosphor layer coated on an outer *circumference* of the dielectric member, since the term “circumference” is defined as a line bounding a rounded, circular or elliptical area or perimeter thereto, and Asano is devoid of any teaching of a rounded address electrode.

This is not persuasive. The Examiner notes that “circumference” is not limited to a round shape, but includes the external boundary or surface of a figure or object, regardless of shape (see Merriam-Webster’s Collegiate Dictionary, 10th edition). Moreover, if the term circumference was limited to a round object, Applicant’s claim 8 is improper as it fails to further limit the subject matter of claim 1. Claim 8 clearly recites the address electrode having a polygonal cross section, not a round, circular or elliptical cross section.

ii. Applicant argues that Kato fails to anticipate the claimed invention since the protrusions **23** and the address electrodes **31** would be extending in both directions parallel to and orthogonal to the display electrodes.

This is not persuasive. Kato discloses a plurality of first barrier rib members **21** in a direction orthogonal to the display electrodes and a plurality of second barrier rib members **23** formed in a direction parallel to the display electrodes. The Examiner concedes that the second barrier rib members **23** of Kato include a first barrier rib portion formed in a direction parallel to the display electrodes and a second barrier rib portion orthogonal to the display electrodes, thus forming the lattice structure recited in Col. 11, lines 28-35. However, the claim language does not prohibit the inclusion of an additional barrier rib portion formed in a direction perpendicular to the display electrodes. Because Kato anticipates every claimed limitation, and because the claims do not exclude the presence of other members in the display, the rejection is proper.

As explained above for the barrier ribs **23**, the address electrodes **31** extend in a direction orthogonal to the display electrodes. The claims do not prohibit said address electrodes to have a portion extending in a direction parallel to the display electrodes.

iii. Applicant remarks that using an electrode having a circular cross section is more than a mere design choice. Applicant argues that the prior art is lacking a similar manufacturing process and a similar thought process as to why to use a circular wire.

This is not persuasive. One of ordinary skill in the art need not have the same reasons Applicant had for combining or modifying an element of a device. The references cited clearly show that it is known to use electrodes having a circular cross-section. While Applicant discloses the suitability of circular cross section wires to attach the electrodes to a fixing groove in the substrate, those limitations are not claimed on the argued claims.

iv. Applicant argues that Asano fail to teach staggered discharge cells. This is not persuasive. For any discharge cell in a position (i,j), a discharge cell in a position (i+1,j+1) or (i+1,j-1), is in a staggered manner and on an opposite side of a first barrier rib. It seems from Applicant's remarks that the intended feature is a discharge cell which the adjacent discharge cell on the opposite side of the first barrier rib is shifted in the first barrier rib direction. However, that is not the claimed limitation.

For the reasons given above the rejection of the claims is deemed proper.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

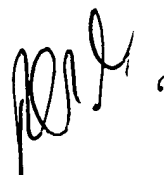
Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to German Colón whose telephone number is 571-272-2451. The examiner can normally be reached on Monday thru Thursday, from 8:30 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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